I CLAIM:

1. A disposable assembly for filtering air drawn into a compressor air intake of an air compressor and for muffling compressor noise exiting from the compressor air intake, said assembly comprising:

a longitudinal housing including

- an air impermeable lateral enclosure,
- an air impermeable housing proximal end closing a proximal end of said lateral enclosure and having air inlet apertures therein, and
- an air impermeable housing distal end closing a distal end of said lateral enclosure;

a longitudinal filter assembly disposed in said housing, said filter assembly including a hollow filter element and disposed between said housing proximal end and said housing distal end, said filter element including

- an air inlet side which is adjacent but spaced from said lateral enclosure so as to form a first acoustic chamber therebetween into which air passing through said air inlet apertures of said housing proximal end is received before being filtered by passing through said filter element, and
- (b) an air outlet side opposite to said air inlet side;

an air impermeable silencing member disposed inside of said filter element adjacent said air outlet side and axially along a length thereof, said silencing member including a plurality of discrete air holes therein and forming a second acoustic chamber interiorly thereof; and

a coupling member at the proximal end of said housing by which said housing is removably attached to the compressor air intake and through which air drawn into said second acoustic chamber is then drawn into the compressor air intake;

whereby as air is drawn into the compressor air intake, compressor noise issuing from the compressor air intake is dampened (a) in said second acoustic chamber as only some compressor noise passes through said air holes of said silencing member, (b) by passage through said filter element from said second acoustic chamber, (c) after exiting from said filter element into said first acoustic chamber and bouncing off of said lateral enclosure of said housing, by reception by said filter element, and (d) by restricted passage through said air inlet apertures.

2. A disposable assembly as claimed in claim 1:

wherein said air inlet apertures are located laterally interior of said first acoustic chamber; and

wherein said filter assembly further includes

- an air impermeable filter proximal end adjacent said housing proximal end; and
- a spacer element which spaces said filter proximal end longitudinally away from said housing proximal end so as to form an air inlet chamber immediately adjacent said air inlet apertures, whereby the compressor noise is also dampened in said air inlet chamber.

3. A disposable assembly as claimed in claim 2, wherein said air inlet apertures are tuned to said inlet side of said filter element.

4. A disposable assembly as claimed in claim 1:

wherein said filter assembly further includes

- an air impermeable filter distal end adjacent said housing distal end; and
- a spring member located between said filter distal end and said housing distal end which (a) holds said filter assembly resiliently in place in said longitudinal housing, (b) forms a third acoustic chamber between said filter distal end and said housing distal end in which compressor noise is dampened, and (c) dampens compressor noise transmitted through said filter distal end to said housing distal end.

5. A disposable assembly as claimed in claim 1:

wherein said filter assembly includes a single said hollow filter element; and

wherein said first acoustic chamber and said second acoustic chamber are filled only with air.

6. A disposable assembly as claimed in claim 5, wherein said hollow filter element is a pleated filter.

7. A disposable assembly as claimed in claim 1, wherein said coupling member is a hollow screw nipple including a threaded section which is threadably received by the compressor air intake in order to make said longitudinal housing removable and disposable.

8. A disposable assembly as claimed in claim 1, wherein said lateral enclosure, said hollow filter element, and said silencing member all have a circular longitudinal cross section.

9. A disposable assembly as claimed in claim 1, wherein said air holes form less than 25% of a surface area of said silencing member.

10. A disposable assembly as claimed in claim 1, wherein said lateral enclosure, said housing proximal end and said housing distal end are permanently secured to one another to form a unitary longitudinal housing in which said filter assembly and said silencing member are disposed.

11. A disposable assembly for filtering air drawn into a machine air intake of an air consuming machine and for muffling noise exiting from the machine air intake, comprising:

a unitary cylindrical housing which is permanently secured together, said housing including

- a cylindrical wall,
- a housing proximal end which is impermeable to air and which includes air inlet apertures therethrough, and
- a housing distal end which is impermeable to air;

a cylindrical filter assembly located between the proximal and distal ends of said housing, said filter assembly including

- a filter proximal end adjacent said housing proximal end which is impermeable to air;
- a filter distal end adjacent said housing distal end which is impermeable to air, and
- a single cylindrically shaped porous filter element disposed between said filter proximal end and said filter distal end through which air is radially passed for filtering, said filter element being spaced from said cylindrical wall to form a cylindrical first acoustic chamber located radially between said filter element and said housing and filled only with air;

a cylindrical silencing member disposed along an inside radial boundary of said cylindrically shaped filter element, said silencing member

- forming a second cylindrically shaped acoustic chamber interiorly thereof and filled only with air,
- being impermeable to air, and
- including a plurality of air apertures therein through which air radially passes from said filter element and into said second acoustical chamber;

a hollow coupling member mounted perpendicularly to the housing proximal end by which said housing is attached to the machine air intake and through which air drawn into said second acoustic chamber is then drawn into the machine air intake;

whereby as air is drawn into the machine through the machine air intake, noise issuing from the machine air intake is dampened (a) in said second acoustic chamber as

only some compressor noise passes through said air holes of said silencing member, (b) by passage through said filter element from said second acoustic chamber, (c) after exiting from said filter element into said first acoustic chamber and bouncing off of said lateral enclosure of said housing, by reception by said filter element, and (d) by restricted passage through said air inlet apertures.

12. A disposable assembly as claimed in claim 11:

wherein said air inlet apertures are located laterally interior of said first acoustic chamber; and

wherein said filter assembly further includes a spacer element which spaces said filter proximal end longitudinally away from said housing proximal end so as to form an annular air inlet chamber immediately adjacent said air inlet apertures, whereby the machine noise is also dampened in said air inlet chamber.

13. A disposable assembly as claimed in claim 12, wherein said air inlet apertures are tuned to said filter element.

14. A disposable assembly as claimed in claim 12:

wherein said filter assembly further includes

- an air impermeable filter distal end adjacent said housing distal end; and
- a spring member located between said filter distal end and said housing distal end which (a) holds said filter assembly resiliently in place in said longitudinal housing, (b) forms a third acoustic chamber between said filter distal end and

said housing distal end in which compressor noise is dampened, and (c) dampens compressor noise transmitted through said filter distal end to said housing distal end.

15. A disposable assembly as claimed in claim 14, wherein said cylindrical filter element is a pleated filter.

16. A disposable assembly as claimed in claim 14, wherein said coupling member is a hollow screw nipple including a threaded section which is threadably received by the compressor air intake in order to make said cylindrical housing removable and disposable.

17. A disposable assembly as claimed in claim 14, wherein said air holes form less than 25% of a surface area of said silencing member.

18. A disposable assembly as claimed in claim 15, wherein said air inlet apertures are tuned to said filter element.

19. A disposable assembly as claimed in claim 18, wherein said cylindrical filter element is a pleated filter.

20. A disposable assembly as claimed in claim 19, wherein said coupling member is a hollow screw nipple including a threaded section which is threadably received by the

compressor air intake in order to make said cylindrical housing removable and disposable.